

**FACT SHEET
OLIN
Olin Gypsum Landfill Closure Certification**

**File Number: none
page 1**

This is an electronic facsimile of a document on file with the Massachusetts Department of Environmental Protection.

Facility: Olin Gypsum Landfill
a/k/a Calcium Sulfate Landfill (CSL)
Address: 51 Eames Street
Wilmington, MA 01887

Owner/operator: Olin Corporation
Address: Lower River Road
P.O. Box 248
Charleston, TN 37310

DSWM ID Number: SL0342.004
Facility Number: 131605
Regulated Object Number: 313063
Permit Number: none
MassDEP/BWSC Release Tracking Number (RTN): 3-0471
USEPA ID Number: MA001403104

Location¹: 42° 31' 24" North Latitude 71° 9' 10" West Longitude
UTM 324,142 mE 4,709,916 mN Zone 19

Size of site: waste disposal area: 2.5 acres
total site: not available

MEPA: application does not trigger MEPA review thresholds.

Current Application:

Type: certification of landfill closure
Transmittal Number: none
date: February 1, 1988
amended: December 13, 2006

Engineer of record:

1988 submission: EC Jordan Co.
261 Commercial Street
P.O. Box 7050
Portland, ME 04112
Alvin K. Ahlers, Project Manager
James S. Atwell, PE

¹ For reference only. Estimated from MassGIS

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page 2**

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2006 amendments: MACTEC Engineering and Consulting, Inc.
 511 Congress Street
 Portland, ME 04101
 Mark Peters, PE
 Peter Thompson, Project Manager

Type of waste: Calcium sulfate (gypsum) from process water treatment

Other Actions Effecting this Application:

Landfill Closure
Conceptual Site Plan
October 13, 1986
application # : NESW-88-006
approved: December 1, 1986
amended approval: June 6, 1988

MassDEP Confirmed Disposal Site
Tier 1A Disposal Site
RTN 3-0471

United States Environmental Protection Agency (USEPA)
Comprehensive Environmental Response Compensation and Liability Act
("CERCLA")
National Oil and Hazardous Substances Pollution Contingency Plan ("NCP")
National Priorities List ("NPL")
Olin Chemical
ID # MA001403104

Submittals as part of this application:

report in letter form:

MACTEC Engineering and Consulting, Inc. to MassDEP
date: December 13, 2006
re: Closure Certification
 Calcium Sulfate Landfill
 51 Eames Street, Wilmington, MA

**FACT SHEET
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page 3**

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plan:

Existing Conditions
Plan of Land
Existing Landfill
Wilmington, Massachusetts
November 10, 2006

prepared by:
Dana F. Perkins, Inc.
Tewksbury, Massachusetts

report:

Draft
Calcium Sulfate Landfill Post Closure Monitoring Plan
51 Eames Street
Wilmington, Massachusetts
December 2006

letter:

MACTEC to MassDEP
May 2, 2007
re: Additional Plans

plan:

Calcium Sulfate Landfill
51 Eames Street
Wilmington, Massachusetts
Approximate Landfill Limits
Plan and Section

prepared by:
MACTEC
05/01/07

Discussion:

The Olin Calcium Sulfate Landfill (the “CSL”) has been identified as being located on a bedrock high resulting in ground water flow to the northeast towards an ephemeral drainage area which divides the Olin property site, and to the southwest where the ground water mixes with ground water flowing from the Woburn Landfill. Ground water studies conducted to differentiate the impact of leachate from the two abutting landfills on the

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page 4**

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ground water have identified that the leachate impacts of the CSL to be limited to the area of the CSL.

The CSL is a mono-fill type industrial waste landfill. The waste disposed of within the CSL is a sludge generated by the treatment of water at the Olin chemical plant located elsewhere on the site. The waste has been described² as consisting of an “essentially pure gypsum” (Calcium Sulfate, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).

West of and adjacent to the CSL is an area identified on the existing conditions plan³ as “Bio-Pit”. The “Bio-Pit” area was established as part of remediation activities at the Olin chemical plant, and is not a part of the CSL. The “Bio-Pit” was not included within the closure of the CSL, and is not subject to this application.

The cap placed on the CSL consists of six (6) inches of low permeability soil overlain by a layer of topsoil to support vegetation. Pursuant to the design standards at the time of construction of the cap, no drainage layer is provided between the impermeable soil and the topsoil.

The cap was constructed between the period of February 1987 and September 1988. Final certification of the cap construction was originally placed on hold in 1987 to allow Olin opportunity to consider impact of modification to the Solid Waste Management regulations (310 CMR 19.00) then under development. The final certification of the completion of the closure was further delayed as Olin reviewed the impact of other remediation activities occurring at the site pursuant to 310 CMR 40.0000⁴ and M.G.L. Chapter 21E. MassDEP has, therefore, reviewed this certification of completion of the closure of the landfill pursuant to the standards as were applicable during the period of construction of the cap (i.e. the standards as applicable prior to July 1, 1991).

Assessment of the Olin property site pursuant to the M.G.L. Chapter 21E and the MCP has determined the contaminants of concern at the Olin property to include the heavy metal Chromium (Cr), plus volatile and semi-volatile compounds including phthalates. In that the sludge was generated by treatment of the water supply to the chemical production activities of the Olin chemical plant, not treatment of waste water from the Olin chemical plant production activities, the volatile and semi-volatile compounds are not expected to occur in significant concentrations within the landfilled sludge. Analyses

² Geomega; “Olin Wilmington Technical Series, IV. Geochemical Discrimination Between Groundwater Emanating from the Calcium Sulfate and Woburn Sanitary Landfills”; February 10, 1999

³ Dana F. Perkins, Inc., Tewksbury, Massachusetts; “Existing Conditions, Plan of Land, Existing Landfill, Wilmington, Massachusetts”; November 10, 2006

⁴ The Massachusetts Contingency Plan, the “MCP”.

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page 5**

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of ground water in the vicinity of the CSL have not detected the presence of Chromium at concentrations of concern.

Continuing remediation activities at the Olin property site are occurring pursuant to the regulations and policies of the U.S. Environmental Protection Agency (USEPA) pursuant to 42 USC 9601-9675 (CERCLA).

The low permeability soil has permeability of approximately 1×10^{-6} cm/sec. The topsoil has an organic content of between 2.8 and 5.3 percent⁵.

As originally constructed, and documented by E.C. Jordan Co., the topsoil layer varied significantly in thickness, with areas with as little as one (1) inch in thickness. Subsequently, Olin modified the topsoil layer by the addition of additional topsoil. Measurements of the topsoil layer by MacTec have identified the completed topsoil layer to be generally seven (7) inches in thickness, with one portion of the landfill thinning to a little over five (5) inches in thickness.

MassDEP, has determined the thickness of the topsoil layer now substantially complies with the specifications of the approved closure plans and is in substantial compliance with the standards of established at 310 CMR 19.15 as applicable at the time of construction of the cap.

⁵ As determined by loss on ignition.